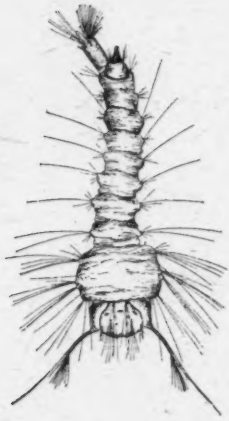
DECEMBER, 1909.

ENTOMOLOGICAL NEWS

Vol. XX. No. 10.



Larva of Culex perturbans as described by Dr. John B. Smith.

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Desiderata of North American Carabidæ

81a, 87a, 106*, 07*, 08, 09, 11, 13*, 15, 17*, 19a, 23a, 23b, 26, 31, 41, 44, 47, 48*, 51*, 54, 58, 61, 62, 63, 66*, 68*, 70*, 71, 75, 80*, 81, 82, 85*, 86*, 87*, 89*, 90, 96, 202, 03, 04, 09, 16*, 23, 29, 36, 38, 45, 46*, 47*, 49*, 50*, 52, 53, 56, 57, 60*, 63, 68, 70*, 72*, 76, 77*, 78, 79, 81, 82*, 91, 93*, 94*, 98, 99*, 301*, 03, 07a, 09*, 10*, 12, 23*, 28, 34*, 35, 36, 38*, 46, 50, 52a, 53, 54, 55*, 62, 63*, 68, 69, 76*, 77, 78*, 82*, 83*, 85*, 90, 93, 98, 99, 400*, 06, 09, 10*, 11, 18*, 19*, 22, 24, 25, 28, 29*, 30, 32, 36*, 37, 38*, 39, 42*, 43, 44*, 46, 47*, 51, 58, 60, 64, 69*, 74*, 77, 78, 79*, 80*, 88*, 89*, 90, 91, 93.

Offerata, rare species of North American Coleoptera. *Lack full set.

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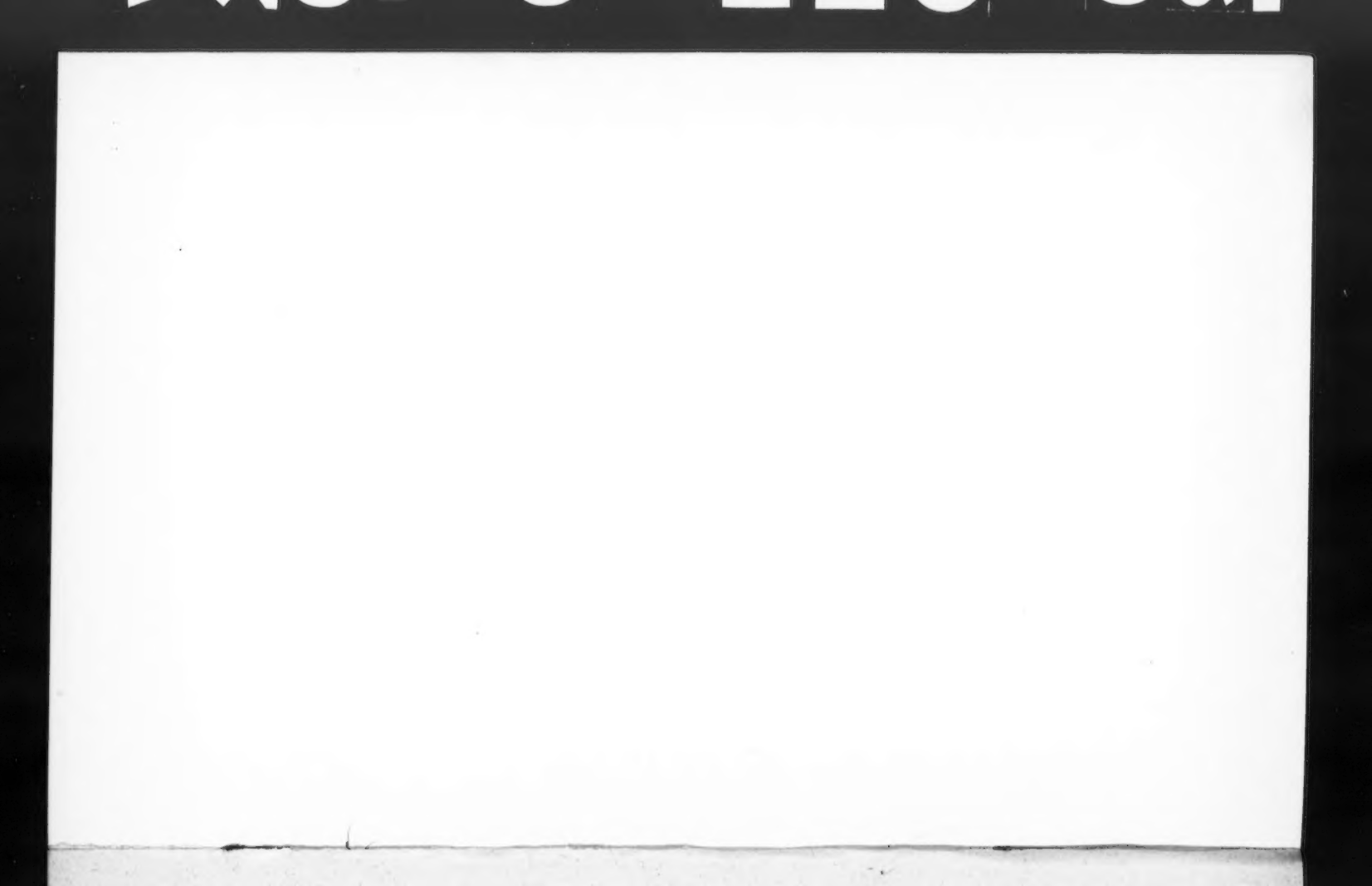

ALLEN ON ANOSIA PLEXIPUS.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XX. DECEMBER, 1909. NO. 10.

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Variations in the Wing Scales of Anosia plexippus.*

By ANNA ALLEN.

(Plates XX, XXI, XXII)

In studying the Lepidoptera, there has often arisen the question as to whether scale characteristics might be used as a means of identification. In 1762, Lyonet stated that "butterflies" might be recognized by their scales, and made an extensive study of those of the goat moth. Schneider, '78, describes typical scales from characteristic regions of a large number of species. Kellogg, '94, made an extensive study of the taxonomic value of butterfly scales, and gives a classification of the Jugatae upon that basis.

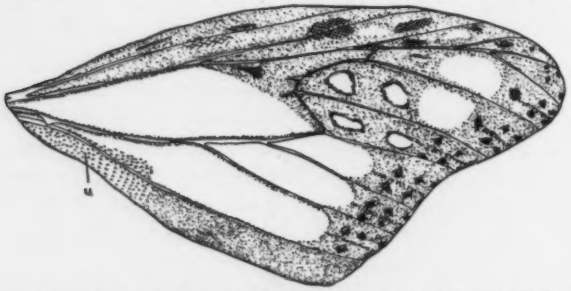
The present study was undertaken because of the interest aroused in the "scent pocket" of Anosia plexippus, our common milkweed butterfly. Certain peculiarly modified scales, the androconia, are found within this pocket. In introduction to the study of these scales, a study of all the wing scales was made. An astonishing variety of forms was found, with indications of definite arrangement upon characteristic regions of the wing. For this reason, a detailed regional study, more especially of the hind wing was undertaken.

* Contribution from the Entomological Department of Cornell University.

The regions chosen are shown in the accompanying illustration. (Fig. 1). They are:

1. General surface area, including a vein, A.
2. Four marginal sections, basal anal, B; outer anal, C; central costal, D; and basal costal, E.
3. Central basal, F.
4. Scent pocket, G.

Widely differing scales occur in these regions. A typical form may be described as a bilaterally symmetrical membranous sac, more or less oval in outline with lobes or apices at the free end, and an indentation, or sinus, at the base. In the center of the sinus is the stalk with its more or less bulbous form fitting into the socket in the membrane of the wing (C. 15). Variations occur in color, in the relative length and breadth of the scale, the number of lobes or apices, the depth of the sinus, and in form itself. Some are nearly triangular, others are unsymmetrical with the sinus much nearer one side than the other.



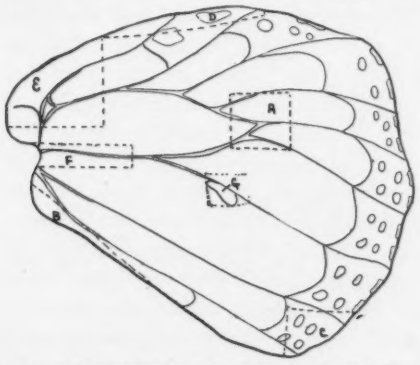
Lower surface of forewing of *Anosia* showing distribution of color and location of the unsymmetrical scales of the "locking device"; *u* = unsymmetrical scales Mag. x1½.

In color, the wings of Anosia are a deep reddish orange (unshaded in figures 2 and 3), with a wide black border which in the forewings covers a large part of the surface. This border is interrupted by a more or less regular double row of white spots. The brown spots are frequently bordered with white scales, and have white scales interspersed with the brown ones, forming lighter brown areas. (Fig. 2). This is particularly true of the underside of the forewing. The arrangement of the scales is in regular overlapping rows which are approximately perpendicular to the veins. These rows continue regu-

larly through the spots, the difference being purely one of color. The scales of the spots are usually more notched than the typical surface scale, but so also are all those in the vicinity of the margin.

The scales of the general surface, as illustrated in A Plate I, closely approach the type form. They are broad usually with a one or three lobed apex (2-3). In the case of the upper surface of the forewing, all the scales are notched, those with several sharp apices predominating. On the lower side of the hind wing, there is seen a tendency toward a more rounded condition of the lobes, and an alternation of the two and four lobed types. On the upper side of the hind wing and the lower side of the forewing, however, an alternation of the one and the three lobed types is conspicuous.

The veins are covered and bordered with closely crowded narrow scales, their width about one-fourth that of the typical surface scale. These scales are usually black, though in regions near the base of the wing, they are frequently brown or yellow. On the lower surface, the scales bordering the veins are interspersed with a few white ones. On the upper surface, dark-



Hind wing of *Anosia* showing regions chosen as typical. Mag. × 1½.

er brown ones are mingled with the others. Here, too, the vein scales almost invariably have entire margins, while on the lower surface, they are notched A. 7-8.

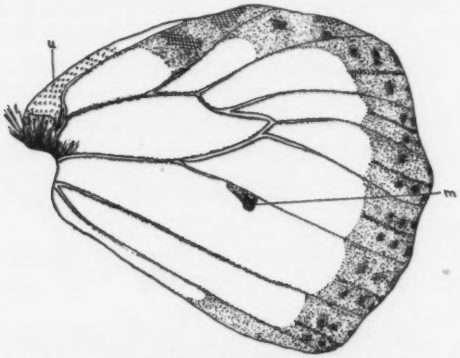
The marginal areas may be considered next. Scales from four typical regions were studied. The basal anal region, seen in B, is marked by its general covering of symmetrical white scales crowded upon the surface. Schneider describes as characteristic of this region in several families, three peculiar types of scales, one of which closely approaches the unsymmetrical form occurring in another portion of the wing; but these types were not found in *Anosia*. Along the immediate margin, appear long plumose hairlike scales. B. 10-12. Along the outer margin, as represented in C, the characteristic fringe scales predominate. These scales closely overlap, appearing to be in several layers. The general surface scales grade into these long and sharply notched ones. There is wide variation in the size and shape of the type, as seen in (C. 17-19). In size, they range from 0.2 mm. to 0.5 mm.; in shape, from rounded scales to characteristic triangular ones with several sharp apices (C. 19). At region D, the central costal area, these fringe scales are somewhat shorter (D. 22, Plate II). The common surface type and the hairlike pulmose ones also occur.

The scales of region E, the basal costal area, are among the most peculiar of the whole wing surface. It is here that the unsymmetrical scales are found (E. 32). These scales have a single sharp apex, the lobe at one side of the sinus much larger than the one on the opposite side, and are marked with oblique striations. It was a type approaching this form that Schneider found not only here, but also along the inner margin of the wing. These peculiar scales occur also on the lower surface of the basal anal region of the forewing (E. 33). In studying their general arrangement, it was noted that their tips stand away from the wing membrane and are also directed away from the margin of the wing. The two regions where these scales occur, overlap. Owing to their projecting tips and oblique arrangement, they might well serve as a "locking device" for the two wings, thus holding them so closely together that they act as one membrane. Occurring also, where Schneider found them, in the region adjacent to the insect's body, they might

serve there, too, a similar function. Scales of this type were found in the same two regions in *Papilio polyxenes* and in *Argynnis*, and are probably of common occurrence in these regions on butterfly wings.

The central basal area, F, is characterized by tufts of hair-like scales both simple and plumose (F. 38-40, Plate III). These hairlike scales are also sparsely scattered along the veins A 9, and occur with the fringe scales at the margin.

The "scent pocket" alluded to, is located on vein Cubitus 2. It is illustrated as region G. This pocket, black in color, is a conspicuous characteristic of the male of Anosia plexippus. Within it, are the most remarkable scales of the wing, the androconia. They are connected with the scent glands whose secretion is poured out over the surface of the scales. From the nature of these scales, Dr. W. A. Riley suggests as a name for the pocket, "murotheca," which means perfume box. The



Upper surface of hind wing of *Anosia* showing unsymmetrical scales *u* and the murotheca *m*. Mag. × 1½.

androconia are needle like in shape (G. 42-43). They are scattered amongst small black scales about 0.07 mm. in length, which have usually an entire margin. Scudder describes both of these forms as androconia.

These companion scales present a noteworthy appearance (G. 44-45). Their characteristics are their small size and irregular arrangement. All the scales described above are

marked by prominent longitudinal striae about 0.002 mm. apart, and by less distinct cross striations. Owing to the heavy pigmentation of these companion scales, their striae were for some time thought to be absent. We have seen that the rows of scales are usually perpendicular to the vein. In the region of the murotheca, however, the rows instead of presenting this appearance, change their direction and assume an almost radial arrangement, the scales in the immediate vicinity of the pocket standing with their axes perpendicular to the vein (G. 41).

In length, the wing scales of this butterfly vary from 0.07 mm. in the case of the androconia and companion scales of the murotheca, through 0.12 mm. in the scales of the general surface, and 0.5 mm. in the fringe scales to several times that length in the case of hairs.

From this brief account of the various types of scales found upon the wings of Anosia plexippus, will be appreciated a few of the obstacles to be overcome before a realization is possible of Lyonet's statement* that, were anyone to take the pains, he might recognize the species of butterflies from their scales, just as a botanist recognizes a plant by its leaves. Not only do a great variety of scales occur in a single species, but many gradations between the types are found.

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*"Chaque espèce de papillon a des écailles faites dans un gôut qui lui est particulier, et par où celui qui voudróit en prendre la peine pourroit se mettre en état de reconnoitre, à la vue de quelques écailles, l'espèce de papillons à laquelle elles appartiennent, comme un pépiniériste reconnoit les arbres, et un botaniste les plantes à leurs feuilles." Lyonet then states that one could not but be surprised by the astounding variety of forms occurring in a single species, not only upon the wings, but upon the body as well.

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EXPLANATION OF PLATES.

PLATE XX.

A. Scales of the general surface, including a vein area.

1. Hair-like plumose scale.

2-3. Typical surface scales. Length, .12 mm. 40 striae .00196 mm. apart.

4. Variation in form of sinus.
5-6. Variations in apices.
7. Vein scale of upper surface.
8. Vein scale of lower surface.
9. General view of vein with hair-like scales scattered on its surface.

B. Scales of the basal anal area.
10, 11, 12. Hair-like scales of the margin.
13-14. Surface scales.

C. Scales of the outer anal area.
15-19. Gradations from surface type to triangular fringe type.
15. Length, .14-.21 mm. 40 striae .00215 mm. apart.
16. Length, .16 mm. 31-32 striae .00245 mm. apart.
17. Length, .21 mm.
18. Length, .28-.34 mm.
19. Length, .42-.5 mm. 31 striae .00218 mm. apart.

PLATE XXI.

D. Scales of the central costal area.
20-21. Hair-like plumose forms.
22. Short fringe type.
23-25. Surface types.
23. Length, .124 mm. 36 striae .00239 mm. apart.

E. Scales of the basal costal area.
26. General view of the region.
27. Hair-like type.
28-29. Unsymmetrical forms with oblique striations. Length, .098 mm. 18 striae .0027 mm. apart.
30-31. Variations of the general surface type occurring here. Length, .15 mm. 38 striae .0017 mm. apart.
32. Enlarged view of the unsymmetrical scale.
33. View of the lower surface of the basal anal region of the forewing.

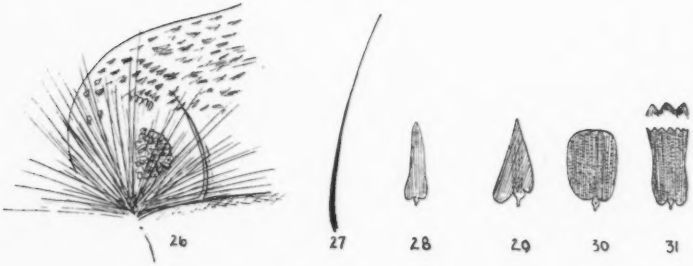
PLATE XXII.

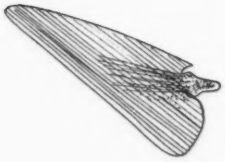
F. Scales of the central costal area.
34-37. Variations of the typical surface scale.
35. Length, .14 mm. 40 striae .0017 mm. apart.
36. Length, .18 mm. 22 striae, .00175 mm. apart.
38-40. Hair-like types conspicuous in this region.

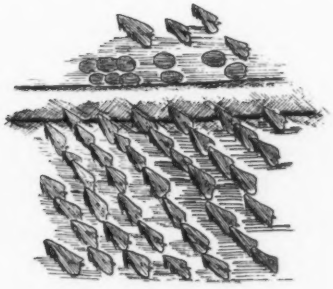
G. Scales of the murotheca and adjacent area.
41. View of the arrangement of scales in this region.
42-43. Androconia. Length, .055-.07 mm.
44-45. Companion scales. Length, .07 mm. Striations visible only at the base or margin of a few scales.
46. One of the plumose hair-like forms occurring upon the vein.
47. Outline of typical scales to show the relative size of the androconia and companion scales.

D

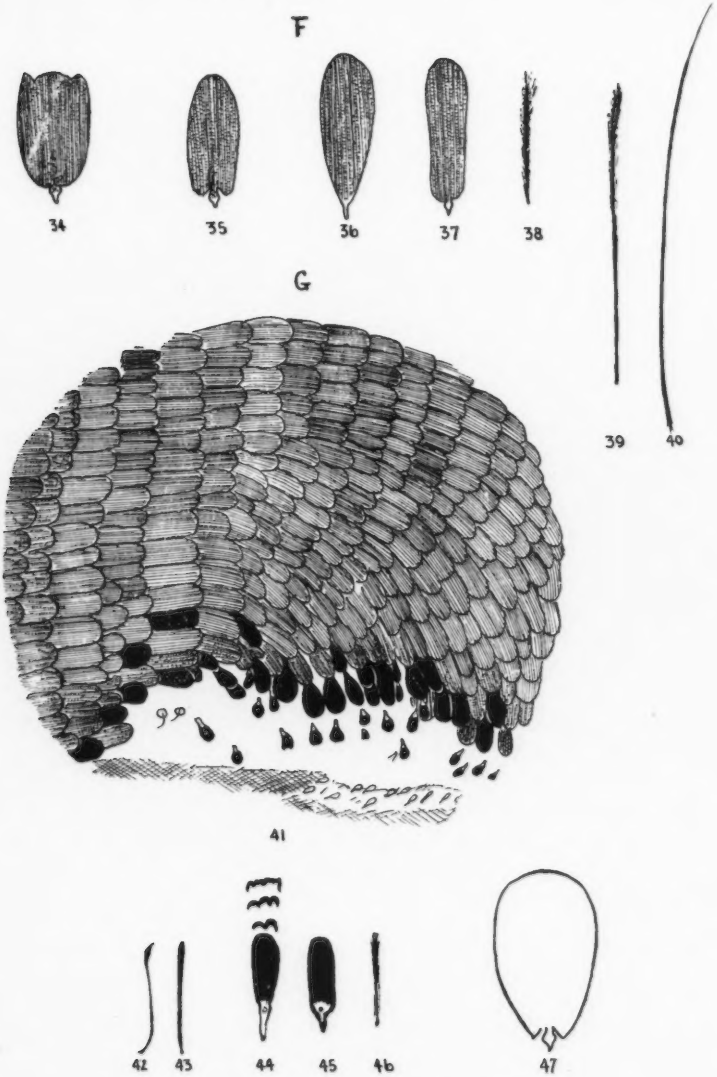
E







ALLEN ON ANOSIA PLEXIPUS.



ALLEN ON ANOSIA PLEXIPUS.

The First Central American Corduline.

By PHILIP P. CALVERT.

In 1897, Prof. G. H. Carpenter, in an article on the geographical distribution of the Odonata,* pointed out the absence of the Cordulinae from Mexico and Central America. Not having succeeded in finding any specimens or records of this subfamily from these countries (except a single mention of *Macronia* larvæ from Northern Mexico), when preparing the account of the Odonata for the *Biologia Centrali Americana*,† I have emphasized in a recent paper‡ the absence of the Cordulinae as one of the characteristics of these areas. As an undoubted member of the group has now been discovered in Costa Rica, I wish to correct the erroneous idea for which I have stood sponsor.

In June, 1909, while enjoying the hospitality of the United Fruit Company, at the house of Superintendent E. W. F. Reed, at Guapiles, Costa Rica, it was my good fortune to find there Messrs. William Schaus and John Barnes, whose labors on the Lepidopterous fauna of Costa Rica are the most extensive yet undertaken and to whose knowledge of the country I am greatly indebted. While at Guapiles we collected Lepidoptera and Odonata, sometimes together, sometimes separately. On one of the latter occasions, on June 4, 1909, Mr. Barnes took a single male of the species described below, in what is locally known as the Florida road, a trail passable for horse and pedestrian, running westward into the virgin forest from near San Jacinto, a hacienda a few miles west of Guapiles. The elevation of Guapiles accepted by Prof. Pittier is 300 metres, and that of the locality here in question can not be very different.

Of the Corduline nature of this male there can be no doubt as it possesses the following characters laid down for that sub-

*Scientific Proceedings, Royal Dublin Society (new series), Vol. VIII, p. 450.

†Cf. volume Neuroptera, pp. 197-198, 1905.

‡"The Composition and Ecological Relations of the Odonate Fauna of Mexico and Central America," Proceedings of the Academy of Natural Sciences of Philadelphia for 1908, p. 461.

rounded apex than at its base, hairy. In the unique specimen the basal part of the penis projects beyond any of the genitalia above described and the vesicle of the penis is as prominent as the genital lobe.

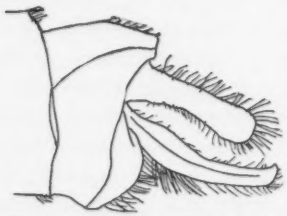


Fig. 2.—Apex of abdomen ♂, left side, profile view. X10.

Legs mostly black but the coxae, trochanters and proximal ends of the femora reddish-brown.

Wings uncolored, stigmata and venation dark brown or black, all the triangles and supratriangular areas free, two post-triangular rows from the discoidal triangle out to the level of the fourth postnodal (front wings) or of the nodus (hind wings), one row of cells between Rs (subnodal sector of de Selys) and the supplementary sector next below, arculus between the first and second antenodals, distinctly nearer to the latter, and proximal to the proximal side of the discoidal triangle.

Fig. 3.—Inferior appendage ♂, ventral view. X10.

Front wings with 13-14 antenodals, 11 postnodals, one cubito-anal (submedian, de Selys) cross-vein, M4 (short sector) and Cu, upper sector of the triangle) subparallel a little nearer together at the level of the second postnodal.

Hind wings with 8-7 antenodals, 14 postnodals, two cubito-anal cross-veins, the distal one coinciding with the arculus, membranule pale brown, anal triangle two-celled.

Dimensions: Abdomen (incl. apps.) 39, superior appendages 2, hind wing 34, costal edge of stigma of front wing 2.5, maximum width of hind wing (at level of separation of M1 + 2 and M3) 11.5 mm.

Fig. 4.—Genitalia of second abdominal segment ♂, inverted. Left side, profile view, X10.

♀. Unknown.

Hab.—Costa Rica, forest west of Guapiles, as above described. Male type in collection of P. P. Calvert.

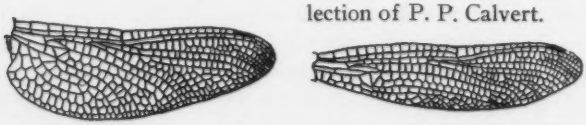


Fig. 5.—Wings of left side ♂, from below. Slightly more than natural size.

family by de Selys: Eyes posteriorly with a graniform prolongation, a bundle of hairs at the external antero-distal extremity of the first femur, first tibia with an inferior distal lamella, auricles on the sides of the second abdominal segment, hind wing with the anal margin excavated and with an anal triangle.

The other members of the genus *Neocordulia,* to which this newly-found insect belongs, are Brazilian and none have yet been found in the territory between Brazil and Costa Rica.

Neocordulia longipollex n. sp.

♂ Vertex and frons metallic purple, the former rounded and convex at tip, the latter with a deep median groove, both punctate and clothed with blackish hairs. Nasus and labrum black, rhinarium and labrum reddish brown, occiput and rear of the head black, hairs on the rear of the head yellowish or pale brown, on the other parts named darker.

Thorax brilliant metallic green with bluish reflections, most of the pectus reddish brown; clothed on all sides with hairs, mostly pale colored, except on the upper parts of the mesepisterna, where they are fuscous, longest on the lower parts of the sclerites named.

Abdomen enlarged at segments 2 and 7-10; black, ventral margins of the tergites of 2-8 narrowly cream colored or yellow. Segment 10 with a mid-dorsal carina continued into a mid-dorsal prolongation of the posterior margin of the segment.

Superior appendages as long as 9 and 10, in dorsal view straight, slightly enlarged at the apex which is somewhat rounded laterally and slightly truncated mesially; in profile view barely convex superiorly, slightly enlarged at the apex which is rounded; except for the slight apical enlargement the appendages are of subuniform thickness and possess no teeth or spines.

Fig. 1.—Superior abdominal appendages ♂, dorsal view. x10.

Inferior appendage longer than (1¼ times as long as) the superiors; in profile view a little concave superiorly with a slight superior convexity at one-third length; in ventral view its truncated apex is half as wide as its base, each of the two apical angles terminating in a small upturned tooth.

Genitalia of abdominal segment 2: anterior lamina concave, concealed in profile view by the sides of the segment; hamule two-branched, posterior branch the larger, depressed, its apex rounded horizontally, anterior branch more prominent, terminating in a slender hook directed caudad, mesad and finally dorsad; genital lobe subequally prominent with the posterior hamular branch, a little narrower at its

The specific name proposed alludes to the length of the inferior appendage of the male which acts as an opposable organ (hence *pollex*) in grasping the female.

The figures illustrating the appendages of the abdomen and the genitalia have been drawn from under the compound microscope with the camera lucida. The wings were photographed to as large a scale as our camera permitted, a blue print made from the negative, the veins inked with waterproof black ink, the blue background washed to white with ammonia water and "copy" thus obtained for the engraver.

Having very little literature on the Odonata accessible to me at present, I have asked Mr. E. B. Williamson to look over the manuscript of this paper and correct it where necessary.

Cartago, Costa Rica, October, 1909.

Dr. Calvert's interesting new species seems to be most closely related to *Neocordulia batesi* Selys, recorded by Martin, from Brazil and Ecuador. In *batesi* the superior appendages, as in *longipollex,* are without any promiences but are conspicuously dilated apically as opposed to the subuniform thickness of the appendages throughout in *longipollex;* and the inferior appendage is shorter than the superiors, not greatly exceeding them as is the case in *longipollex.* No changes have been made in Dr. Calvert's manuscript. E. B. W.

The Bees of Virginia—Prosopis, Sphecodes, Osmia.

By John H. Lovell, Waldoboro, Maine.

The bees of the southern states are so imperfectly known that collections from any part of this region possess more than usual interest. Some months ago I received from Dr. Nathan Banks for determination a collection of bees largely from Virginia belonging to the genera, Osmia, Sphecodes and Prosopis. Only a few species of Osmia and Prosopis have been recorded from this state, while the genus Sphecodes is wholly unknown from this area. A list of the species is as follows:

PROSOPIS.

Of the five species of Prosopis enumerated in this paper four occur also in the northeastern states, while one, *P. minyra,* is described as new. If specimens of Prosopis with yellow markings are left too long in the cyanide jar the yellow marks change to red. Even dried specimens, if exposed to the action of cyanide of potassium, will undergo a similar change. The yellow coloration of some species of wasps under these conditions also becomes red. Such artificial color changes, if unknown, might easily lead to mistakes in identifications.

Prosopis pygmaea Cr.

♀. Falls Church, Va., May 30, on flowers of *Castanea pumila,* June 22, July 6, on flowers of *Ceanothus,* N. Banks.

Prosopis verticalis Cr.

As the female has never been described it is deemed desirable to give the more important characters:

♀.—Length about 6mm., larger than the male which it closely resembles. Deep black; the bow-shaped marks on each side of the face and the tubercles are yellow (the collar and tegulae are dark); the anterior and intermediate legs wholly black, the posterior legs have the tibiae yellow at base. Head longer than broad, the clypeus is distinctly but sparsely punctured, the face closely and evenly punctured. Mesothorax opaque, the punctures small and very evenly distributed. Wings nearly hyaline, stigma and nervures fuscous. Enclosure of metathorax well-defined, irregularly and finely reticulated (in the male the rugae are more nearly parallel). The first abdominal segment is smooth and shining, with patches of white pubescence on the apical lateral margins.

Two females collected at Falls Church, Va., on May 24; one male at Falls Church, Va., May 24, N. Banks.

Prosopis minyra n. sp.

♂.—Length about 4 mm. The clypeus, supraclypeus and the sides of the face are yellow; the upward extensions of the lateral face marks are short and obliquely truncate; two spots on the collar and the tubercles, the anterior tibiae in front, the intermediate tibiae at base and apex (slightly), the posterior tibiae at base and all the tarsi, yellow. Head about as broad as long, the face narrowed below, the punctures of the face and mesothorax are close and small. Antennae black, the scape normal, the flagellum is fuscous in front, light brown behind. Wings nearly hyaline, iridescent, the nervures and stigma are fuscous, the

tegulae nearly dark brown. Enclosure of metathorax semicircular, strongly pitted. The first abdominal segment smooth and shining, the compound microscope shows that it is nearly impunctate in the center and sparsely and very finely punctate on the sides.

Type from Church Bridge, Va., June 9, N. Banks. About the size of *P. pygamaea* from which the form of the face marks and the spots on the collar easily distinguish it. The face marks resemble those of *P. ziziae,* from which it differs in its smaller size and the absence of yellow spots on the scapes and tegulae. The shade of yellow of the markings is not stated in the description as they had been reddened in the cyanide jar; but, so far as can be inferred, they were lemon yellow.

Prosopis ziziae Robt.

♀. Falls Church, Va., May 20, May 30, on flowers of *Castanea pumila,* June 14, July 6, N. Banks.

♂. Falls Church, Va., June 2, on flowers of *Castanea pumila,* June 9, N. Banks, also two specimens from Ithaca, N. Y.

Prosopis modesta Say.

As Say's type is no longer in existence and his description is very brief, the correct identification of this species has been regarded as doubtful. In another paper I hope to show that Say's species can be determined with a high degree of certainty. I have examined the common species of Indiana (the probable type locality) belonging to this genus, and have obtained figures and new descriptions of *P. affinis* Sm. prepared by Col. Bingham from the types in the British Museum, with which *P. modesta* has frequently been confounded. The name has been so long and so widely used that it is desirable to retain it if possible.

♀. Falls Church, May 14, May 30, on *Castanea pumila,* June 2, on *Castanea pumila,* June 14, July 5 on *Ceanothus,* July 16, Aug. 5; Great Falls, Va., June 7, July 17; Church Bridge, Va., June 9; Glencarlyn, Va., July 2, July 28 on *Ceanothus*: Washington, D. C., July 21; Sea Cliff, N. Y., collected by Nathan Banks.

♂. Falls Church, Va., May 30 on flowers of *Castanea pumila,* June 7, June 24, June 27, July 5, July 20, Aug. 2; Great Falls, Va., May 22, June 7, Sea Cliff, N. Y.; June, N. Banks.

The first abdominal segment is usually finely and sparsely punctured, but occasionally on the center or disc the punctures are very few in number and cannot be clearly distinguished without the aid of the compound microscope, but on the sides of the segment they still remain numerous. The color of the markings is pale or lemon yellow.

SPHECODES.

As it is necessary to determine whether the mandibles of species of *Sphecodes* are simple or dentate they should be spread when the specimens are collected. If this is omitted it is often necessary to relax them, and the moisture of the relaxing jar may largely increase the area of black coloration upon the abdomen. The color of the abdomen should, of course, always be carefully noted and recorded before the specimens are placed in the jar.

Sphecodes dichrous Sm.

♂. Falls Church, Va., Aug. 2 on flowers of sumach; Great Falls, July 12, N. Banks.

Sphecodes obscurans Lov. and Ckll.

♀. Sea Cliff, N. Y., N. Banks.

Sphecodes heraclei Rob.

♀. Falls Church, Va., July 17, N. Banks.

♂. Falls Church, Va., July 17, N. Banks.

This species is easily identified by the tubercle on the vertex of the head.

Sphecodes confertus Say.

♀. Great Falls, Va., May 22; Falls Church, Va., June 2; also Ithaca, N. Y., N. Banks.

Sphecodes ranunculi Robt.

♀. Falls Church, Va., June 2, June 23 on flowers of *Ceanothus,* N. Banks.

♂. Falls Church, Va., May 10, May 24, N. Banks.

Sphecodes mandibularis Cr.

♀. Sea Cliff, N. Y., N. Banks.

Sphecodes illinoiensis Robt.

♀. Glencarlyn, Va., May 9, N. Banks.

Sphecodes stygius Robt.

♀. Falls Church, Va., July 16, July 17 on flowers of Angelica villosa, Aug. 5, N. Banks.

Sphecodes banksii n. sp.

♀.—Length 3-4 mm. Head and thorax black; abdomen red, the apical segments clouded with black. Head about as broad as long; mandibles simple, yellowish-red the apices darker; face finely and densely punctured, clothed with thin, white hair; labrum sometimes reddish, clypeus smooth and shining almost impunctate; antennae brownish-black, flagella reddish brown. Mesothorax smooth and shining, with small, sparse punctures; tubercles red. Enclosure of metathorax well-defined, with parallel ridges. Wings hyaline faintly tinged with fuscous, iridescent, nervures and stigma fuscous; tegulae reddish testaceous; second submarginal cell narrow, the sides nearly parallel. Legs reddish-brown, clothed with silvery white hair. Abdominal segments 1-3 light or yellowish-red, the apical segments not deeply shaded with black; basal segment with a few fine punctures, the other segments finely and closely punctured all over except on the apical margins.

The description is based on four female specimens from Sea Cliff, Long Island, N. Y., N. Banks. This is a very distinct form and I know of no other species in North America with which it can be compared. The species is dedicated to Dr. Nathan Banks.

Sphecodes distolus n. sp.

♀.—Length 6 mm. Head and thorax black; abdomen largely red, the apical segments only partially black. Head broader than long; mandibles red with darker apices, bidentate; clypeus without a median suture, with small rather close punctures; face very finely and densely punctured; antennae black, flagella reddish brown, joints 3 and 4 nearly equal. Mesothorax finely and densely punctured, wings hyaline, stigma, nervures and tegulae pale fuscous, the first transverse cubital nervure is absent and there are only two submarginal cells, the first of the two cells is nearly three times the length of the second, the venation (except the radial nervure) beyond the basal nervure is subobsolete. The enclosure of the metathorax is well-defined, the center smooth and shining

with about three ridges on each side. The trochanters are largely red, the femora largely black, all the tibiae and tarsi are red. Abdominal segments 1-3 are chestnut red, segment 4 is black in the center, segment 5 largely black; segment 1 is nearly impunctate, with a few, fine, widely scattered punctures; the other segments have very fine, shallow punctures except on the apical margins.

One specimen from Great Falls, Va., July 17, N. Banks. *S. Distolus* differs from *S.* (*Dialonia*) *antennariae*, which also has only two submarginal cells, in its larger size, dentate mandibles, black mesothorax with coarser punctuation, venation and color of abdomen.

OSMIA.

Osmia lignaria Say.

♀. Falls Church, Va., April 18; Glencarlyn, Va., May 4, N. Banks. ♂. Falls Church, Va., April 18, N. Banks.

Osmia melanotricha Lov. and Ckll.

♀. Glencarlyn, Va., May 4; Great Falls, Va., June 25, *S. distolus* differs from S. (*Dialonia*) *antennariae*, which also been found in Colorado. The type locality is Maine.

Osmia pumila Cr.

♀. Great Falls, Va., May 22, June 7; Glencarlyn, Va., May 4, May 10, N. Banks.

♂. Falls Church, Va., April 26 on flowers of *Waldsteinia;* Glencarlyn, Va., May 4, N. Banks.

Osmia purpurea Cr.

♀. Falls Church, Va., May 24, June 2, June 24, N. Banks. This species, says Cresson, may be readily distinguished by the dark purple coloring and the narrow fasciae of the abdomen. The mandibles are 4-dentate.

Osmia rustica Cr.

♂. Falls Church, Va., May 24, June 2, N. Banks.

Osmia georgica Cr.

♀. Falls Church, Va., May 29, N. Banks.

ERRATUM.—In ENT. NEWS. Vol. XX, No. 3, March, 1909, on page 124 for S. nubilus read S. nephelotus.

New Aleocharinae (Staphylinidae, Col.) of the U. S.

By A. FENYES, Pasadena, Cal.

1. **Silusa densa** Brnh., i, litt. spec. nov.

Moderately depressed, parallel, with sparse, yellow pubescence.

Head black, opaque; prothorax piceous brown, opaque; elytra reddish brown with a large triangular scutellar and still larger triangular external marginal area piceous brown, so that the ground color appears only on a narrow oblique semi-lunar vitta, reaching from humerus to apical sutural angle, opaque abdomen piceous black, at apex lighter, a little shining; antennae piceous, paler toward base; legs pale dirty reddish.

Antennae about as long as head and prothorax together, strongly incrassate toward apex; joint 2 longer than 3; 4 small, transverse; 5-10 gradually wider, transverse, the penultimate joints almost twice as wide as long; 11 about as long as 9 and 10 together, large, oval.

Head transverse, very finely, not densely punctate; eyes large, prominent, longer than the tempora; genae entirely margined.

Prothorax a little wider than the head, transverse, about two-thirds wider than long, sides and base rounded a little narrower in front than behind; hind angles obtuse, blunt; moderately densely and finely punctate.

Elytra a little wider and a little longer than the prothorax, outer hind angles strongly emarginate; moderately, a little coarsely, quite densely granulosely punctate.

Abdomen parallel; segments 3-6 transversely impressed at base; at base a little coarsely and more densely, at apex more finely and sparsely punctate.

In the male the 7 dorsal segment of the abdomen with a short carinula in the middle before the apex; 8 dorsal segment at apex truncate emarginate, with sharp crenulations.

Length, 2.6 mm.

Pasadena, in California, under sycamore bark.

2. **Silusa opaca** spec. nov.

Rather robust, moderately convex, subparallel, inconspicuously pubescent.

Head black, opaque; prothorax and elytra piceous red, vaguely darkly suffused, opaque; abdomen piceous black, apical segmental margins and apex vaguely piceous red, a little shining; antennae piceous brown, joints 1-3 and 11 reddish yellow; legs reddish yellow.

Antennae about as long as head and prothorax together, moderately incrassate toward apex; joints 2 and 3 subequal; 4 moderately, 5-10 strongly transverse; 11 scarcely as long as 9 and 10 together, oval, pointed.

Head much narrower than the prothorax, transverse; extremely densely and extremely finely punctate; eyes large, tempora short, genae entirely margined.

Prothorax almost as wide as the elytra, strongly transverse, about two-thirds wider than long, narrower in front than behind; sides and base rounded, the latter at the sides sinuate, hind angles obtuse; convex, with a faint transverse basal depression extremely densely and very finely punctate.

Elytra considerably longer than the prothorax, hind angles strongly emarginate; extremely densely and finely, somewhat roughly punctate.

Abdomen subparallel; segments 3-5 transversely impressed at base; rather densely, not finely punctate.

In the male the 7 dorsal segment of the abdomen in the middle very near to the apex with a scarcely visible small tubercle; 8 dorsal segment at apex truncate, with 4-5 rather prominent teeth in the middle, at each side with another, more prominent, longer tooth.

Length, 2.2-2.4 mm.

Tahoe City, Deer Park Springs, Tallac, in California, on mushrooms and toadstools.

3. **Atheta (Halobrectha) algophila** spec. nov.

Moderately elongate, moderately depressed, almost parallel.

Piceous black, moderately shining, abdomen a little more shining, elytra and apex of abdomen sometimes a little lighter; antennae reddish brown, the first three or six joints, mouth and legs lighter, reddish yellow.

Antennae moderately long, longer than head and prothorax together, moderately pubescent and setulose; joints 1, 2 and 3 elongate, 2 longer than 3; 4 and 5 longer than wide, 4-10 gradually a little shorter and wider, the penultimate joints one-half wider than long; 11 not quite as long as 9 and 10 together, oval, with blunt apex.

Head a little narrower than the prothorax, longer than wide, rounded, with prominent mandibles; coarsely and moderately densely punctate, with an impunctate middle area; with sparse yellowish pubescence; eyes rather small, almost shorter than the tempora; genae entirely margined.

Prothorax narrower than the elytra, about one-third wider than long, sides conspicuously rounded, narrowed behind, hind angles obtuse, moderately densely and finely punctate, with sparse yellow pubescence; with a shallow transverse basal foveola and two side bristles.

Elytra wider and about one-third longer than the prothorax, together almost longer than wide, almost parallel; outer hind angles conspicuously emarginate; densely and finely punctate, with moderately sparse, conspicuous yellowish pubescence.

Abdomen but very little narrowed behind; segments 3-5 transversely impressed at base; finely and sparsely punctate, segments 6 and 7 still more sparsely punctate, almost smooth.

Nails long, toothed at base.

Mesosternum carinate in the middle in front, very pointed behind, entering about three-fourths between the middle coxae, the latter moderately separated.

Metasternum pointed in front, entering a little between the middle coxae; a very short isthmus between the two sternal points.

In the male the 8 dorsal segment of the abdomen rounded; the 6 ventral segment a little produced, narrowed at apex.

In the female the 8 dorsal segment rounded; 6 ventral segment scarcely produced, rounded, not narrowed at apex.

Length, 2.6-3 mm.

San Diego, in California, under seaweed on the ocean shore.

4. **Atheta** (**Atheta**) **hilaris** spec. nov.

Moderately elongate, a little narrowed in front and behind.

Head black, very little shining; prothorax piceous black, with the margins sometimes lighter, moderately shining; elytra testaceous, with a vaguely defined black area around the scutel and a large, triangular black spot at the hind angles, moderately shining; abdomen yellow in front, from segment 5 on black, the centers of the yellow segments with a vague blackish cloud; antennae piceous, their first joints and the mouth testaceous; legs pale yellow.

Antennae longer than head and prothorax together, moderately incrassate toward apex; joint 1 longer and thickened; 2 and 3 about equally long; 4 about square; 5-10 gradually incrassate, the penultimate joints about one-half wider than long; 11 as long as 9 and 10 together, oval, pointed.

Head narrower than the prothorax, rounded, a little transverse, very finely and very sparsely punctate; eyes large, longer than the tempora; genae entirely margined.

Prothorax narrower than the elytra, about two-thirds wider than long, sides strongly rounded; base rounded, at the sides emarginate; finely and sparsely punctate, with a shallow basal fovea and two-three side bristles.

Elytra wider and about one-third longer than the prothorax, moderately densely and finely, subgranulosely punctate, very finely pubescent.

Abdomen a little narrowed behind; segments 3-5 transversely impressed at base; very finely and very sparsely punctate, segments 6 and 7 smooth.

Mesosternum triangular behind, with a blunt point, reaching about one-half between the middle coxae, the latter a little separated.

Metasternum produced in front, with a blunt point, meeting the mesosternal point.

In the male the 7 dorsal segment of the abdomen with a round tubercle in the middle, nearer to the apical margin; 8 dorsal segment rounded, truncate, with a pointed tooth at each side, these teeth separated by a deep sinus from a middle lobe, the latter with rounded angles and a slight almost angular median emargination; 6 ventral segment moderately produced, rounded, narrowed at apex.

In the female the 8 dorsal segment rounded, slightly emarginate in the middle; 6 ventral segment rounded, a little narrowed.

Length, 2.8-3 mm.

Porvenir and Upper Pecos Valley, in New Mexico.

5. **Atheta (Dimetrota) laetula** spec. nov.

Moderaely elongate, rather depressed, moderately broad, very little narrowed in front and behind.

Head black, with very faint bronze lustre, very little shining; prothorax and elytra brownish yellow, the latter with a faint darker cloud around the scutel and at the outer hind angles, almost opaque; abdomen reddish yellow, its apex from the 5 segment on black, the very apex sometimes a little lighter again, moderately shining; antennae piceous brown, the first two joints and the mouth a little lighter; legs yellow.

Antennae a little longer than head and prothorax together, moderately incrassate toward apex; joint 1 a little thickened; 2 and 3 about equally long, the latter sometimes a little shorter; 4 a little shorter and narrower than 5, transverse; 5-10 gradually incrassate, transverse, the penultimate joints about twice as wide as long; 11 longer than 9 and 10 together, oval, pointed.

Head a little narrower than the prothorax, rather large, transverse, moderately densely subgranulosely punctate, sparsely yellowish pubescent; eyes large, prominent, much longer than the tempora; genae entirely margined.

Prothorax a little narrower than the elytra, about one-half wider than long; sides evenly, moderately rounded; base rounded, emarginate at the sides; hind angles obtuse, not entirely rounded; densely subgranulosely punctate, with yellowish pubescence and 2-3 conspicuous black side bristles.

Elytra wider and about one-third longer than the prothorax, outer hind angles a little emarginate; very densely, not very finely punctate, with rather dense, conspicuous yellow pubescence.

Abdomen very little narrowed behind; segments 3-5 transversely impressed at base, not very sparsely and finely punctate, segments 6 and 7 a little more sparsely punctate, with sparse yellowish pubescence and robust black side bristles.

Mesosternum pointed behind, entering about three-fourths between the middle coxae, the latter a little separated.

Metasternum pointed in front, meeting the mesosternal point.

In the male the 8 dorsal segment of the abdomen truncate, with 4 equidistant teeth, the two middle ones a little broader and blunter at apex than the side teeth, the latter pointing slightly inwards; 6 ventral segment rounded, narrowed toward apex, moderately produced.

In the female the 8 dorsal segment rounded, a little narrowed toward apex, slightly truncate and slightly emarginate in the middle; 6 ventral segment rounded, narrowed, scarcely produced.

Length, 2.4-2.6 mm.

6. **Atheta (Dimetrota) neomexicana** spec. nov.

Moderately elongate depressed and robust, very little narrowed in front and behind.

Head and prothorax black, with faint bronze lustre, moderately shining; elytra piceous brown, very little shining; abdomen black, more shining; antennae piceous, their first joints and the mouth a little lighter; legs brownish yellow.

Antennae a little longer than head and prothorax together, moderately incrassate toward apex, finely pubescent and moderately setulose; joint 1 longer, thickened; 2 scarcely longer than 3; 4 longer than wide; 5-10 gradually incrassate, the penultimate joints about twice as wide as long; 11 almost longer than 9 and 10 together, oval, pointed.

Head a little narrower than the prothorax, a little transverse, rounded, moderately densely, subgranulosely punctate, very finely pubescent; eyes large, longer than the tempora; genae entirely margined.

Prothorax narrower than the elytra, about one-half wider than long, sides evenly rounded, very little convergent in front; base rounded, at the sides emarginate; hind angles rounded; moderately densely, subgranulosely punctate; sparsely pubescent, with 2-3 side bristles.

Elytra wider and about one-third longer than the prothorax; densely subgranulosely punctate, finely pubescent.

Abdomen very little narrowed behind; segments 3-5 transversely impressed at base; very finely and sparsely punctate, segments 6 and 7 almost smooth; with black side bristles.

Mesosternum pointed behind, entering about two-thirds between the middle coxae, the latter a little separated.

Metasternal process meeting the mesosternal process.

In the male the 8 dorsal segment of the abdomen with four teeth, the two middle ones a little nearer to the side teeth than to each other, rather blunt, separated by a shallow sinus; the two side teeth a little longer, pointed, pointing inwards, separated from the middle teeth by a little deeper sinus; 6 ventral segment rounded, narrowed toward apex, a little produced.

In the female the 8 dorsal segment rounded truncate, scarcely emarginate at apex; 6 ventral segment rounded, very little produced, angularly emarginate at the middle of the apex.

Length, 2.4-2.6 mm.

Porvenir, in the Gallinas Canon, in New Mexico; in fungi.

7. **Atheta (Dimetrota) nigrita** spec. nov.

Moderately elongate and depressed, narrowed in front and behind.

Black, moderately shining; antennae and legs piceous black.

Antennae about as long as head and prothorax together, moderately incrassate toward apex, very finely pubescent and setulose; joint 2 longer than 3; 4-10 gradually incrassate toward apex, the penultimate joints about one-half wider than long; 11 about as long as 9 and 10 together, oval, pointed.

Head narrower than the prothorax, rounded, a little narrowed in front; extremely finely and sparsely punctate and pubescent; eyes rather small, shorter than the tempora; genae entirely margined.

Prothorax a little narrower than the elytra, narrowed in front, about two-thirds wider than long; sides and base rounded; posterior angles rounded; moderately densely and finely punctate, almost inconspicuously pubescent; with a round shallow basal fovea and two fine side bristles.

Elytra a little wider and about one-third longer than the prothorax; densely and subgranulosely punctate, very finely pubescent.

Abdomen narrowed behind; segments 3-5 transversely impressed at base, rather sparsely and not very finely punctate, inconspicuously pubescent, with strong black side bristles.

Mesosternum with a long, not very acute point behind, entering about two-thirds between the middle coxae, the latter a little separated.

Metasternum produced in front, meeting the mesosternal point.

The 8 dorsal segment of the abdomen apparently in both sexes truncate; 6 ventral segment rounded, produced.

Length, 1.5-1.7 mm.

Sugar Pine Mills, in California, sifted along a creek.

8. **Atheta (Metaxya) subpolaris** spec. nov.

Elongate, depressed, parallel, very little narrowed in front.

Head black, moderately shining; prothorax piceous to piceous black, almost opaque; elytra brownish yellow, very little shining; abdomen piceous black, the tip lighter, shining; antennae and mouth piceous brown; legs testaceous.

Antennae longer than head and prothorax together, very little incrassate toward apex, very finely pubescent and setulose; joint 2 very little longer than 3; 4 longer than wide; 5-10 gradually very little in-

crassate, the penultimate joints a little longer than wide; 11 shorter than 9 and 10 together, oval, pointed.

Head narrower than the prothorax, about square, rounded, very sparsely and almost invisibly punctate; eyes rather small, shorter than the tempora; genae not entirely margined.

Prothorax very little narrower than the elytra, very little wider than long, sides very moderately, about evenly rounded, base rounded, slightly emarginate at the sides, hind angles rounded; moderately densely and finely punctate, with yellow pubescence with a shallow transverse basal fovea and 2 side bristles.

Elytra very little wider and longer than the prothorax, external hind angles slightly emarginate; moderately densely and finely punctate, with yellow pubescence.

Abdomen parallel; segments 3-5 transversely impressed at base; sparsely and very finely punctate; segments 6 and 7 still a little more sparsely punctate; segment 7 longer than 6; with sparse yellow pubescence.

Mesosternum very finely pointed behind, entering about two-thirds between the mildle coxae, the latter almost contiguous.

Metasternum very finely pointed in front, almost meeting the mesosternal point; intercoxal isthmus short, vaguely defined.

In the male the 8 dorsal segment of the abdomen truncate, rounded; 6 ventral segment produced, its sides parallel, the apex broally rounded truncate, very feebly emarginate, with rounded angles and with a few fine bristles on the margin.

In the female the 8 dorsal segment rounded; 6 ventral segment rounded, narrowed toward apex, scarcely produced.

Length, 3-3.3 mm.

Flagstaff, in Arizona, sifted from the detritus carried down in a storm ditch.

9. **Ocalea** (**Ocalea**) **fusca** spec. nov.

Moderately elongate and convex; shining, sparsely yellowish pubescent.

Head and prothorax piceous black; elytra piceous brown to piceous red; abdomen piceous black, at apex lighter; antennae piceous black; joint 1 reddish; legs reddish.

Antennae scarcely longer than head and prothorax together, feebly incrassate toward apex; joints 1-3 elongate; 4 longer than wide; 5 and 6 about square; 7-10 slightly transverse; 11 not as long as 9 and 10 together, oval, moderately pointed.

Head much narrower than the prothorax, longer than wide, rounded oval, scarcely constricted at base; moderately strongly and rather sparsely punctate; eyes moderate, about as long as the tempora; genae entirely, sharply margined.

Prothorax narrower than the elytra, a little wider than long, sides and base rounded; more narrowed in front than behind; with a shallow rounded basal impression; almost smooth, with 4 or 5 black side bristles.

Elytra about one-half longer and about one-fourth wider than the prothorax, outer hind angles emarginate; finely, rather sparsely, somewhat aciculately punctate.

Abdomen very little narrowed toward apex; segments 3-5 transversely impressed at base; finely, very sparsely punctate, with numerous marginal black hairs.

Mesosternum with a long acute process; middle coxae narrowly separated.

Length, 3 mm.

Flagstaff, in Arizona, together with Atheta subpolaris.

Concerning Culex perturbans at Dublin, New Hampshire.

By JOHN B. SMITH.

In the Proceedings of the Entomological Society of Washington, Vol. XI, pp. 145-149. Dr. Harrison G. Dyar writes interestingly concerning the mosquitoes at Dublin, New Hampshire, and particularly on the occurrence of *Culex* (*Mansonia*) *perturbans*. The article is not only interesting from what it contains, though there is nothing new concerning *perturbans;* but much more interesting because of its omissions, some of which I feel moved to supply to the end that the remainder of the entomological fraternity may enjoy it as much as I did. Dr. Dyar records the failure of the combined efforts of Messrs. Busck, Caudell, Howe, Stowell and himself to locate the breeding places of *perturbans* at Dublin in 1908 and prior to August, 1909. It may be added to this, that Mr. Howe came to New Jersey in 1908, received all the information we could give him and went into the field with Mr. Grossbeck, who showed him exactly where and how to find the larvæ.

Mr. Howe evidently failed to profit by the instruction sufficiently to enable him to locate the insects at Dublin, and Dr. Stowell himself came to New Brunswick in October, 1908. He also received full information and was taken into the field

and shown just how and where we found the wrigglers. Nevertheless, neither he nor, as Dr. Dyar shows, any others of those who attempted to locate the insects at Dublin, succeeded in the attempt.

Dr. Stowell in consequence became very urgent that either Mr. Grossbeck or myself should come to Dublin to help them out, because of the serious injury to the community interests, and I finally agreed that, on my return from a trip into Maine, I would stop over at Boston on Saturday, July 31st, and would run up to Dublin on the morning train, go over the ground generally, give suggestions and return on the afternoon train.

Now by a very curious coincidence, Dr. Dyar decided to break into his vacation and to visit Dublin on exactly that same day, and still more extraordinarily, his choice fell on exactly the same train that carried me. We therefore arrived at Dublin at the same time and Dr. Stowell did not seem much surprised to see Dr. Dyar; certainly not so much as I was when he came to me in the train soon after we were well away from Boston.

Almost as a matter of course Dr. Dyar joined the party of which Dr. Stowell, Mr. Howe and myself were the other members, and for three or four hours we were carried in an automobile to all the points which had been suspected as breeding places. I eliminated a number of these for reasons given; but pointed out one swamp area as an ideal spot for them and declared positively that, when properly sought for the larvæ would here be found. Another area I declared was a probable breeder, but so different from New Jersey conditions that I could not be certain without investigation. A very cursory investigation was made at one point in this area and nothing was found. I was careful to explain just how the search should be made and left Dublin after promising Dr. Stowell that I would send Mr. Grossbeck up the week following.

Dr. Dyar remained at Dublin. Next week Mr. Grossbeck reached Dublin, ready for work, and was informed that Dr. Dyar had gone out the day or so after I left, and *in the swamp that I had pointed out as an ideal breeding place* had found one

egg boat and three pupal shells. This, he was informed, constituted the sole takings and from these all the conclusions reached by Dr. Dyar were drawn. In view of these facts the following phrase in Dr. Dyar's paper becomes much more interesting. "This source is not always easy to discover. The writer made a third visit to Dublin in August, 1909, and *was able to discover an extensive breeding place of the species.*"*

Mr. Grossbeck carried on his explorations for several days and found many egg boats as well as a full grown and recently hatched larva in the area in which Dr. Dyar had found his specimens. He also found egg boats in the electric light swamp pointed out by me as a probable breeding place, in spite of Dr. Dyar's statement that "Oviposition at present is therefore impossible here." Two other breeding places were located, one small, probably the place referred to by Dr. Dyar, and one very large and well within the range of *perturbans* flying powers. The matter is therefore not quite so simple as Dr. Dyar would have the inhabitants of Dublin believe.

Dr. Dyar credits previous work on *perturbans* development as follows: "The breeding habits of this species are peculiar. Fortunately they are now known, through the timely discovery of Mr. J. T. Brakeley, at Lahaway, New Jersey." In "Ent. News" XIX, 22, January, 1908, I published all that was then known of *perturbans,* showed that the first egg boats in nature were found by Mr. Grossbeck, and credited Mr. Brakeley with being the first to find larvæ actually attached to roots. The further work on the development of the larva was done by Mr. Grossbeck who also published, in December, 1908, "Ent. News" XIX, p. 473, the characters and habits of the pupa. Mr. Brakeley has published nothing and all the information concerning the breeding habits of *C. perturbans* comes from Mr. Grossbeck or myself.

With these few explanations and additions I trust that the scientific and practical value of Dr. Dyar's paper will be better appreciated.

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*The italics are mine.

Notes on Chambers' Species of Tineina.

By Annette F. Braun, Cincinnati, Ohio.

Of the innumerable species of Tineina, described by the late Mr. V. T. Chambers, of Covington, Kentucky, not a few are at the present time unrecognized or imperfectly known. This is due to a number of circumstances, all of which have combined to render the identification of Chambers' species difficult and have led in a number of cases to unavoidable errors. Apparently some of Chambers' types were never deposited in any institution and these often represented species of which the short description is inadequate for identification. Other species were described from specimens in such poor condition that the author himself often expressed doubts as to the correctness of his observations. A third category includes species which were named from preparatory stages alone and referred in some cases to the wrong genera. In large genera, where some species have been described from imago, others from larva or mine, the confusion can be cleared up only by the rearing of all of such species.

The writer is making an effort to rediscover by breeding and collecting those of Chambers' little known species, which were described from Ohio and Kentucky, with the intention of publishing from time to time notes which shall give additional information on life histories, correct faulty descriptions, and give complete descriptions of species known only in the larval state.

Trichotaphe nonstrigella Chambers.

Dasycera nonstrigella Chambers, Bull, U S. Geol. Surv., IV, 92, 1878.
Trichotaphe nonstrigella Busck, Dyar's List N. A. Lep. No. 5661, 1902; Proc., U. S. Nat. Mus., XXV, 910, 1903.

This rather remarkable species, which was originally described by Mr. Chambers from a single female specimen, I have found very common locally around Cincinnati, but until a few years ago, its early stages remained entirely unknown.

During the latter half of April and the beginning of May,

the terminal leaves of the growing shoots of *Aster shortii* Hook, may be found spun together by a Gelechiid larva, which has proved to be that of *T. nonstrigella*. By the middle of May, the larvae have all pupated in a fold made by turning over the edge of a leaf.

Larva when mature about 14 mm. long. Head shining blackish; next three segments plum colored, thoracic shield blackish; segments 3 and 4 each ornamented with a pair of elongate, shining black tubercles; on dorsum at the posterior end of segment 3, a pair of grayish white spots and a similar smaller pair at the anterior end of segment 4. The remaining segments and the posterior end of segment 4 grayish white, longitudinally marked with 7 plum colored stripes, one median and three lateral, of the same width as the ground color between them; a few scattered hairis arsing from small black tubercles Legs black.

The moths begin to appear about the 20th of May, and during the latter part of May and early part of June are often exceedingly numerous in the vicinity of their food plant. Occasional scattered specimens may be found as late as the first week in July. The species is single brooded.

Ypsolophus citrifoliella Chambers.

Nothris citrifoliella Chambers, Jn. Cin. Soc. Nat. Hist.. II, 184, 1880; Comstock, Rep. U. S. Dept. Agr., p. 205, 1880.

Ypsolophus citrifoliellus Busck, Dyar's List N. A. Lep., No. 5683, 1902; Proc. U. S. Nat. Mus., XXV, 923, 1903.

There appears to be no record of the occurrence of this species in the North, nor of any food plant other than orange.

The larvae around Cincinnati feed within the folded leaves of Prickly Ash, *Xanthoxylum americanum* Mill., a plant which botanically and in its chemical properties is closely related to the orange.

Although the Prickly Ash grows commonly near some of Chambers' old collecting grounds in Kentucky, he does not seem to have ever met with the larvæ or imagoes of *Y. citrifoliellus*.

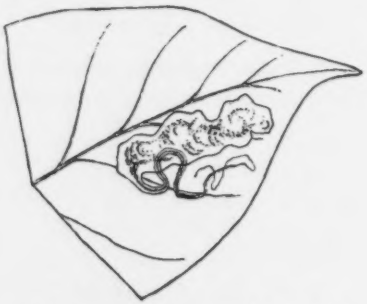
Nepticula nyssaefoliella Chambers.

Nepticula nyssaefoliella Chambers, Psyche, III, 66 1880; Dyar, List N. A. Lep., No. 6206, 1902.

Face and head tufted, reddish yellow. Antennae one-half, dark

brown above, pale ocherous beneath, eye caps shining, whitish. Thorax and forewings black with purplish reflections toward the apex of the wing. Just beyond the middle of the wing is a slightly curved pale golden fascia, which is broadest on the dorsal margin, where a few golden scales extend along the margin toward the base. Apical cilia silvery, costal and dorsal cilia tinged with purple, the latter becoming concolorous with the hind wing. Abdomen above and below, and anal tuft, purplish black. Legs pale gray with purple and metallic reflections. Expanse: 4 mm.

This is one of the numerous species of *Nepticula* named from mine or larva only. The mine which occurs quite commonly on leaves of Sour Gum, *Nyssa sylvatica* Marsh, is chiefly interesting because of its superficial resemblance in shape to that of *Antispila nyssaefoliella* Clem., from which it differs, of course, in lacking the transparency characteristic of an *Antispila* mine, and in the *abrupt* enlargement of the linear mine into a blotch.



Mine of *Nepticula nyssaefoliella* Chamb.

The mine begins as a very narrow winding linear tract, with a narrow line of frass through the center. A few days before pupation, this abruptly enlarges into an elongate, irregular pale brownish yellow blotch, 2 cm. or more in length and averaging 5 or 6 mm. in width, with the grains of frass scattered throughout its area.

The cocoon is pale greenish, somewhat oyster-shell shaped with its broader anterior edge flattened.

Ornix inusitatumella Chambers.

Ornix inusitatumella Chambers, Can. Ent., V, 47, 1873; Dietz, Trans. Am. Ent. Soc., XXXIII, 289, 292, 1907; Dyar, List N. A. Lep., No. 6392, 1902.

Mr. Chambers' original description of this species is incorrect and was probably made from a rubbed specimen, as his type has been pronounced identical with *O. crataegifoliella* Clem. A series of bred specimens of *inusitatumella* shows that it is not even closely related to *crataegifoliella*, the most marked differences being the uniform ground color of the wings and the three entire ciliary lines.

Mine of *Ornix inusitatumella* Chamb. Cocoon *Ornix inusitatumella* Chamb.

Palpi whitish, the tip of the second joint and a broad annulus blackish. Head grayish fuscous, with the tufts, especially behind, tinged with brown. Thorax and forewings dark brown, the latter, especially toward the base tinged with purple. Eight costal striae, of which the last seven are distinct and whitish on the costa; the eighth stria very short, the three preceding ones extended nearly to the dorsal margin; the fifth, sixth and seventh from the apex angulated in the middle of the wing and thence extending to the dorsal margin as a purple shade. Interstrial spaces conspicuously darker. Plical spots almost obsolete; the first broader but more indistinct than the second, which is a narrow black dash. Subplical space not paler than the rest of the wing. Cilia fuscous at their base, whitish beyond with three entire lines. Expanse 7.5—8 mm.

This species is a miner on the upper side of *Crataegus tomentosa* L. in Kentucky, according to Chambers, and in Ohio on *Crataegus mollis* (T. & G.) Scheele, from which I have bred it. The thin loosened upper epidermis of the almost circular blotch is yellowish white, sprinkled with frass. Later the epidermis becomes wrinkled to such an extent that the leaf is often almost folded double. At the time of pupation, the larva leaves the mine, and spins on the middle of the upper surface of the loosened epidermis a reddish yellow cocoon which is speckled with brown, exactly like the spots on the epidermis. Without very careful observation, this creates the impression that the cocoon is within the mine, as Chambers described it. The epidermis is attached to the lower surface and sides of the cocoon, this process often tearing the epidermis at each side, and the upper side of the cocoon does not project above the general level of the mine. The pupa, on emergence, does not project through the epidermis of the mine, but through the upper side of the end of the cocoon.

O. Inusitatumella is most nearly related to *O. prunivorella* Cham., from which it differs by its smaller size, more distinct striae and the absence of the patch of semi-erect scales on the middle of the dorsal margin.

Marmara smilacisella Chambers.

Phyllocnistis smilacisella Chambers, Cin. Quat. Jn. Sci., II, 107, 1875; Busck, Proc. U. S. Nat. Mus., XXIII, 252, 1900; Dyar, List N. A. Lep., No. 6426, 1902.

Head and face silvery gray, except the vertex which has a few fuscous scales Antennae shining brownish gray. Labial palpi silvery white, the apex of the second joint beneath somewhat roughened with dark brown scales, terminal joint with a dark brown annulation near the tip. Maxilary palpi dark blackish brown. Thorax dark brown. Forewings dark brown, somewhat mottled, in some lights with a deep blue iridescence. The markings which are silvery white are somewhat variable. At the basal third is a perpendicular slightly curved silvery fascia; this is, however, sometimes reduced to a white dorsal spot, reaching only to the fold. At the middle of the costa is an oblique curved white spot sometimes reaching to the middle of the wing, where its apex is opposite that of a triangular dorsal spot, situated a little farther

back; at the apical third, a triangular costal spot and opposite it, a much smaller dorsal spot; just before the apex, a small white costal spot. Apical cilia white; cilia below the apex gray with a line of dark scales through their middle, extending to the tornus. Hindwings dark brown. Abdomen dark brown, underside whitish, except near the thorax and at the bases of the segments. Legs black, with silvery annulations of varying width. Expanse: 5-5.5 mm.

This species was named by Chambers from the mine only, and erroneously referred to the genus *Thyllocnistis*. Chambers states (Cin. Quart. Jn. Sci. II, 108, 1875) that he found the mine only in Southern Kentucky on the leaves of *Smilax glabra* and never met with it in Northern Kentucky.

The three minees which produced the moths from which the above description was prepared, were found at Cincinnati, Ohio, August 31st, on the upper side of leaves of *Smilax hispida* Muhl. The mine is silvery white, narrow, even in the later stages not more than 2.5 mm. wide, with a narrow central line of frass. Its course is very winding, crossing and recrossing the earlier portion of the mine, and covering in the case of the smaller leaves almost the entire surface of the leaf.

The larva at maturity turns bright red, and leaving the mine, spins the peculiarly ornamented cocoon characteristic of the genus.

The cocoon, which is yellowish white, with a group of iridescent globules at each end, is spun in a small fold at the edge of the under side of the leaf.

The imagoes appeared September 23d and September 29th. In two of them, the fascia at the basal third is complete, in the third, it is represented only by the dorsal spot.

Tinea croceoverticella Chambers.

Tinea croceoverticella Chambers, Can. Ent. VIII, 106, 1876; Dietz, Trans. Am. Ent. Soc., XXXI, 54, 1905; Dyar, List N. A. Lep., No. 6500, 1902.

Several specimens of this species were bred from the flat white fungus which often covers large portions of the trunks of dead and partially burned beech.

The larva is a case-bearer and feeds externally on the fun-

gus. The case is formed of closely packed particles of frass and sawdust, and is lined with a dense sheet of grayish white silk. It is 8 or 9 mm. long, broadest in the middle, tapering to a narrower neck at each side of the middle, then flaring out again at the ends which are somewhat ragged.

Case of *Tinea croceoverticella* Chamb.

The larva does not seem to feed upon the large white patches of fungus, where its gray case would be very conspicuous, but attacks the small patches just beginning to grow around the crevices in the bark. While feeding the case extends out horizontally; at other times it is closely appressed to the bark, and is not easily discovered. At pupation the case is strongly attached to the bark at both anterior and posterior ends by four groups of silken threads, two at each end.

The cases were first observed on the fifth of June, and the larvae continued to feed for about a week. The imagoes appeared June 29th and July 7th; captured specimens in my collection are, however, dated a week or ten days earlier.

THE United States Civil Service Commission announces an examination on December 15, 1909, to secure eligibles from which to make certification to fill a vacancy in the position of entomologist in the Bureau of Science, Manila, Philippine Islands. The salary of this position at present is $1,600 per annum.

ZOPHOBAS MORIO Fabr. This species of Tenebrionidæ described by Fabricius in his Genera Insectorum, p. 241, 1776, should be added to the List of American Coleoptera and placed after *Upis*. Specimens bearing the label "Fla" have been for years in the collections of Dr. Horn, the American Entomological Society and Dr. Castle. According to data received from the latter this species has been collected at Key West, Fla., VIII, 28, 07, and later dates by Mr. John Hanlon in numbers under the loose saddles of the palmetto. GEO. M. GREENE.

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and, as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for a certain issue. Twenty-five "extras," without change in form, will be given free, when they are wanted; and this should be so stated on the MS., along with the number desired. The receipt of all papers will be acknowledged.—ED.

PHILADELPHIA, PA., DECEMBER, 1909.

We have been very much gratified at the way the increased price of the NEWS has been received by subscribers and friends. We now hope to make the NEWS even more useful to the entomological fraternity.

Along with the subscriptions at the increased rate we are getting comments like the following:

Heartily approve your advance in price to keep up the efficiency of the NEWS. Wonder how you managed so long on a dollar.

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I had often wondered how you could maintain the NEWS at so low a subscription price and am glad to support you in the advance in price.

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It is certainly worth it.

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It is a credit to those who have made it what it is and invaluable to those interested in entomology.

A. B. CHAMPLAIN.

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It is in my estimation the best journal devoted to entomology published in America.

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The NEWS surpasses itself with each succeeding volume. How you do it for the subscription price nobody can explain. I have been a subscriber since the first year, and I have derived great pleasure as well as profit from your unselfish labors.

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I enclose my subscription for your beautiful little magazine which no entomologist in this country can afford to be without.

MARY E. MURTFELDT.

The NEWS starts out with two fine big numbers. It now has no peer among entomological journals.

H. C. FALL.

Enclosed you will find two dollars, which kindly apply to the expense of issuing the NEWS for 1910. Long may she wave. Having advised you to do this some years ago I am glad to see you make the experiment.

F. A. MERRICK.

It is very likely that we will continue the resumé of the literature of entomology that was so much appreciated in former years.

It will be noticed that subscription blanks are placed in each copy of this issue. Those who have paid will either disregard the slip or send it to a friend interested in entomology.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

CHANGE OF NAME.—In the Science Bul. Bklyn. Inst. Mus. vol. I, p. 379, I described *Monocrepidius texanus*. As *texanus* is preoccupied I propose *Monocrepedius similis* for the species. CHARLES SCHAEFFER.

BRITISH INSECTS IN CANADA. I have recently received from Cape Race, Newfoundland, a Daddy-long-legs, *Tipula oleracea*, female, two blackish Red Admiral Butterflies, *Vanessa atalanta;* a Green Veined White, *Pieris napi*, with the veins blackish; a blackish water beetle, *Dyticus marginalis* and a timber longhorn, *Callidum violaceum*, all typical British species; but I was surprised to see enclosed with them a Milk Weed Butterfly, *Anosia plexippus*, which I had no idea migrated so far North and an American Painted Lady, *Pyramis huntera*. Previously I received from the banks of the Saint Laurence, captured at

Clarke City, a Camberwell Beauty, *Vanessa antiopa;* a small dragon fly, *Agrion cyathigerum,* and a geometrical moth, *Cidaria immanata,* all typical British. It would be interesting to know which of these insects are the old inhabitants of the subpolar regions and which have been introduced by commerce; the water beetle is also found in Greenland. I have over and above an apterous Oil Beetle, *Meloe cordillerae,* purporting to come from South America, which is so like its British cousins that one is tempted to ask how long it took to walk on its heteromerus legs to Chile.

As regards *Pieris napi,* an English entomologist would recognize it as such. I have Mr. W. G. Wright's Butterflies of the West Coast at hand and most of the species on Plate VI we over here would call seasonal or local forms of *napi,* which varies the same and to a greater extent in the British Islands, I do not quite recognize his *bryoniae,* but I suppose he has identified it with the Swiss mountain form, it most resembles the specimen I have from Cape Race and may be the subpolar, ancestral form; the other species on Plate VI seem to be *P. rapi* and what I imagine to be hybrids between *napi* and *rapi,* we have them also in Britain. A. H. SWINTON, Totnes, Devonshire, England.

THE meetings in Boston promise to be very interesting and a large attendance is expected.

NOTES on the Occurrence of Some Butterflies rare in Massachusetts and Maine.

I. *Junonia coenia.*—On August 12th, 1909, I captured two specimens of this insect at Isle au Haut, Maine, (an island twenty miles to the eastward of Rockland). They were both hovering around a small puddle, surrounded by milkweek on a path leading up the one mountain of the island, and were decidedly darker in color than those that I have seen taken in the Southern States. I find that Mr. W. C. Wood reports on page 386 of the NEWS for October 1908, that he saw a specimen at York, Maine, and that this was also decidedly darker than the Southern specimens. I do not know of this species having been taken as far North as this before.

II. *Euptoieta claudia.*—I captured one of this species in August 1901, at Wareham, Mass., but have never seen a sign of one so far North as that until September 11th, 1909, when I saw, close by, but was unable to capture one at Gerrish Island, not far from Kittery, Maine.

III. *Catopsila eubule.*—I have seen various records of this insect being taken in Massachusetts, but I have never seen an account of them being plentiful. In a small garden on the Island of Chappaquidick, to the eastward of Martha's Vineyard, on September 21st, 1909. I was greatly surprised to see several large yellow flies darting here

and there among the flowers, and after sometime, succeeded in capturing one, without a net, which proved to be C. eubule. I saw as many as twelve more hovering hither and thither among the flowers for over half an hour, at the end of which time I went sailing; but curiously there was no sign of a single one of these insects on the two following days; where they came from and went to is a mystery.

IV. *Limenitis arthemis.*—During the past summer I have seen as many as five of these insects in Milton, Mass., but have not seen even one there before in the past twelve summers. I also saw eight of this species on Mount Desert Island, Maine, during August, where I have seen only one before during the past ten years in August. It seems possible that this insect may be migrating towards the coast and to the southward.—GEORGE R. MINOT, 188 Marlborough St., Boston, Mass.

BOOKS RECEIVED.

OUTLINES OF ENTOMOLOGY. Part one, Anatomy and Physiology, by Oscar W. Oestlund. The H. W. Wilson Company, Minneapolis. Forty-four pages.

BARKBEETLES OF THE GENUS DENDROCTONUS by A. D. Hopkins, Ph.D. Bureau Ent. Bull. 83, part I, 169 pages. A very valuable contribution.

REPORT of the Entomological Department of the New Jersey Agriculutral Exper. Station for the year 1908. By John B. Smith, Sc.D. 428 pages.

INSECTS Injurious to shade trees. By John B. Smith, Sc.D. State Entomologist of New Jersey. Two plates in color.

THE Green Bug and its Natural Enemies. Bulletin of the University of Kansas, Vol. IX, No. 12. By S. J. Hunter, Professor of Entomology, Univ. Kansas, 221 pages. An important publication.

A Dream.

After an evening spent with a "List of the Specimens of British Animals in the Collection of the British Museum. Part V. Lepidoptera. By J. F. Stephens.

The *Scotophila tragopogonis* creeps out of the *Lasiommata aegeria,* in the *Xylocampa lithoriza* of dawn;

And the *Hipparchia semele* leaps in the *Emmelesia rivulata,* and splashes the *Odoptera fuscautaria.*

In the vault of the *Polyammatus aegon,* drifts a *Xylina conspicillaris* so wet,

That each dew-crowned *Phibalapteryx tersata* is soon bedecked with a *Dianthecia albimacula.*
'Neath an old *Boarmia punctularia,* like a russet *Hepialus humuli,* a *Eupithecia venosata* sighs
And a *Cerura furcula* plays in the *Hipparchia janira*
Where the *Mamestra suasa* violet lies.
Oh, sweeter far is the *Ephyra punctaria* than the *Thyatira batis's* dainty hue,
And her fresh *Psyche fusca* is quite in tone with the morning's *Polyommatus argiolus.*
No *Cynthia cardui* with jeweled crown though it be of *Geometra papilionaria* made,
Can vie with the *Venessa antiopa* here in this *Ceratopacha fluctuosa* glade.
But the *Hipparchia tithonus* wakes in his nook by the *Lasiommata megaera*
And stamps on the *Graphiphora brunnea,*
While a *Macroglossa stellatorum* clad in his *Plusia chrysites* darts forth from the *Acronycta salicis* gray.
The *Clisiocampa neustria* throws open the window wide where the *Odonestis potatoria* yawns o'er his beer
When an *Atolmis rubricollis* struts about—And I'm glad that the day is here.

KEY.

The "Mouse" creeps out of the "Speckled Wood" in the "Early Gray" of dawn,
And the "Grayling" leaps in the "Rivulet" and splashes the "Dusky Thorn"
In the vault of the "Silver Studded Blue", drifts a "Silver Cloud" so wet,
That each dew swept "Fern" is soon bedecked with a "Beautiful Coronet."
'Neath an old "Gray Birch" like a russet "Ghost," a "Pretty Widow" sighs;
And a "Kitten" plays in the "Meadow Brown" where the "Dog's Tooth" violet lies.
Oh, sweeter far is the "Maiden's Blush" than the "Peach Blossom's" dainty hue,
And her fresh "Brown Muslin" is quite in tone with the morning's "Azure Blue."
No "Painted Lady" with jeweled crown though it be of "Large Emerald" made
Can vie with the "Camberwell Beauty" here in this "Satin Carpet" glade.

But the "Gate Keeper" wakes in his nook by the "Wall" and stamps on the "Purple Clay"
While a "Humming bird" clad in his "Burnished Brass" darts forth from the "Willow" gray.
The "Lackey" throws open the window wide where the "Drinker" yawns o'er his beer.
Then a "Red Necked Footman" struts about—And I'm glad that day is here.

G. W. J. ANGELL.

Doings of Societies.

A meeting of the American Entomological Society was held April 22, 1909. In the absence of the President and Vice-President, Dr. Castle was asked to preside. Members present Castle, Laurent, Skinner, Liebeck, Associates of the Entomological Section, Ilg, Viereck, Matthews, Haimbach, Daecke, Cole, Kelley, Greene, Rehn. The minutes of the last meeting were read and approved.

Mr. Ilg exhibited a moth *Feralia jocosa,* taken on the Wissahickon.

Mr. Matthews exhibited some species of *Hepialus* and other rare and beautiful moths from Queensland, Australia.

Mr. Laurent said that not unfrequently he had had Chinese specimens sent to him mounted on needles.

Mr. Viereck spoke of the advantages of Washington as an entomological center.

Mr. Daecke spoke on collecting experiences around Harrisburg and described the geography of the nearby mountains.

Dr. Skinner exhibited and described the new drawer case for the Brock tins. These are intended for large insects.

Mr. Rehn made some remarks on the Orthoptera portion of Smith's new list of New Jersey insects. The speaker had submitted a large number of notes to Prof. Smith and included twenty-eight species additional to those treated in Smith's 1889 list, a number in the old list being considered too doubtful for inclusion.

The different physiographic and faunistic regions of south-

ern New Jersey, as recently laid out by Mr. Stone were also discussed and the distribution of certain of the families in that portion of the State commented upon. The data or distribution was said to be remarkably complete for certain species.

HENRY SKINNER, *Secretary.*

A meeting of the American Entomological Society was held October 28, 1909. In the absence of the President and Vice-President, Dr. Castle occupied the chair. Fourteen persons were present including Prof. F. M. Webster, of Washington, D. C.

Prof. Webster said this was the first meeting of the Society he had attended. He spoke of the enormous growth of the study of entomology and the increased number of people engaged in the work and contrasted the present with days of the pioneers. He referred to the skin eruption in the West produced from threshing straw and due to the mite *Pediculoides ventricosus,* particularly where the joint worm is common. Cases have been reported where the disease had been contracted from straw mattresses. This disease is caused by a mite, its natural food being the larva of the Angoumois grain moth, the mite being predaceous. It is an external parasite on insects.

Mr. Rehn made some remarks on a trip made during the past summer in company with Mr. Hebard in the western states collecting Orthoptera. The territory covered was very extensive and over ten thousand Orthoptera were collected. A number of the localities visited were in regions unknown Orthopterologically and much valuable information on the food plants and habits of a number of species was secured in addition to the specimens collected. Many rarities and a number of new species were secured.

Dr. Skinner exhibited a *Chionobas* from Colorado supposed to be a new species, an aberration of *Melitaea mylitta* and *Alcathoe korites* from New Mexico. The latter two taken by Mr. John Woodgate at Fort Wingate.

HENRY SKINNER, *Secretary.*

At a regular meeting of the Feldman Collecting Social, held September 15, 1909, at 1523 S. 13th Street, Philadelphia, thirteen members were present. President Harbeck in the chair.

A letter was read from Mr. J. A. Grossbeck, Secretary of the Newark Entomological Society, inviting the Feldman to the celebration of the 25th anniversary of that Society. The Secretary was instructed to answer this, thanking them for same.

Mr. Wenzel said that at the present time the marshes in "the Neck" are perfectly dry and that *Cicadas* are very numerous. They settle on the end of the reeds where they "sing their little song."

Prof. Smith said in New Brunswick after the Pennsylvania Railroad had elevated the tracks through that place and had brought sand for the embankments from outlying districts the large wasp *Sphecius speciosus* Dru. bred there and has almost exterminated the *Cicadas,* and that there were hundreds of them before the *Cicadas* appeared. Mr. Davis, instead of collecting *Cicadas* finds a colony of these wasps and there waits and takes the *Cicadas* as the wasps bring them in. Mr. Harbeck said he had the wasps sent to him from the Perkiomen where there is a colony of them.

Mr. Wenzel read an interesting, humorous, clipping on the wasp *Eumenes,* taken from an advertising newspaper.

Prof. Smith exhibited a large ♀ carpenter ant *Camponotus* and a half grown Pentatomid. At first sight he thought it was the ant with her prey, but on closer inspection he saw that the Hemipteron had its beak in the abdomen of the ant and was allowing itself to be dragged along, sucking away all the time until the specimens were picked up.

Mr. Wenzel exhibited a *Mantispa brunnea* Say collected by him at Da Costa, N. J., July 4, 1909.

Mr. Daecke exhibited leaves and fruit of paw paw from Harrisburg, also *Tortrix fumiferaua* Clem. July 21, 1909, at light in untold numbers and said it had been reported from the neighboring districts as common (Dr. Skinner said it was common here at the same time). A pupa shell of a micro in paw

paw and *Pyrausta laticlavia* G. and R. bred from horse mint (*Monarda punctata* L.) the larva collected at Delair, N. J., August 22, 1909, and bred September 6, 1909. The larva is the same color as the adult. *Pomphopoea sayi* Lec from Factoryville, June 19th and June 20th where they destroyed the roses, white and yellow, but did not touch the red ones; Friendsville, June 26th with the same complaint and Birchardville, June 29th said that *Lema sexpunctata* Oliv. was very common in a small space at Conewago, Pa., August 14, 1909, and other days on Virginia Day Flower (*Commelina virginica* L) having taken 114 in one day. This seems to be the northern limit of the species, as those in the Academy and Horn collections are from Georgia and Texas. Exhibited a specimen of the plant showing the damage done by the insect.

Mr. Harbeck exhibited specimens of *Icterica seriata* Loew and *I. circinata* Loew and stated that they were fairly common on marshy ground in a space about thirty feet square at Broad Street Park, Trenton, N. J.

Mr. Wenzel described how he had examined the maritime plants at the shore for Coleoptera and found many flea beetles.

Mr. Kaeber exhibited a series of Queen's instruments, such as are used on a North Pole expedition.

Dr. Skinner said he had a moon vine on his place at Ardmore, Pa., and he had noticed *Polistes* on the buds in the morning and on the same flowers when he came home at night, and as far as he knew they were there all day and remained immovable for over a month. Others appeared and did the same, but disappeared when the flowers opened. Same speaker said Peary had found bees within 500 miles of the Pole.

Adjourned to the annex.

GEO. M. GREENE, *Secretary.*

A meeting of the Entomological Section of the Academy of Natural Sciences of Philadelphia was held May 27th, 1909. Mr. H. W. Wenzel, Vice Director, presided. Eight persons were present. Dr. F. E. Blaisdell, of San Francisco, and Mr. M. Reyher, of Philadelphia, visitors.

Dr. Blaisdell said it gave him great pleasure to be present in the East and attend a meeting here. The Pacific Coast Entomological Society has created an additional interest in Entomology in that part of the country. In his own specialty, Coleoptera, he had been particularly interested in the Tenebrionidae and had been working in conjunction with his friend, Dr. Van Dyke. In the Eleodiini he believed he could find characters to separate the species and had found his surmise correct. The primary genital characters proved a great aid and the preparation of these and the methods of study were described in detail. The nomenclature of the parts was meagre and names had to be given. The anatomy of these insects was described and illustrated.

Mr. Wenzel said Dr. Blaisdell was to be congratulated on the painstaking and valuable work he had done in this very difficult group.

Mr. Rehn exhibited some specimens of Orthoptera collected by Mr. Hebard and himself in the summer of 1907 in Western Texas and New Mexico. The speaker called attention to the extensive range of certain species exhibited, notably *Parophomala calamus* and *Auconia caeruleipennis.* As an illustration of the occasional restriction of a species to river valleys the case of *Diapheromera persimilis* in the Rio Grande valley was mentioned. Mr. Morgan Hebard was elected a member and Mr. C. T. Greene and Mr. J. E. Stanyon were elected associates.

HENRY SKINNER, *Recorder.*

A meeting of the Entomological Sections was held September 23, 1909. In the absence of the Director and Vice-Director, Dr. D. M. Castle occupied the chair. Nine persons were present.

Dr. Skinner exhibited Pennsylvania specimens of *Thecla patersoni,* taken by Mr. F. M. Jones, also an aberrant *cecropia* from Bristol, Pa., the real color being largely replaced by yellow. Mr. Herman Hornig mentioned a recent trip into the mountains near Harrisburg, where he took *Papilio ajax.*

HENRY SKINNER, *Recorder.*

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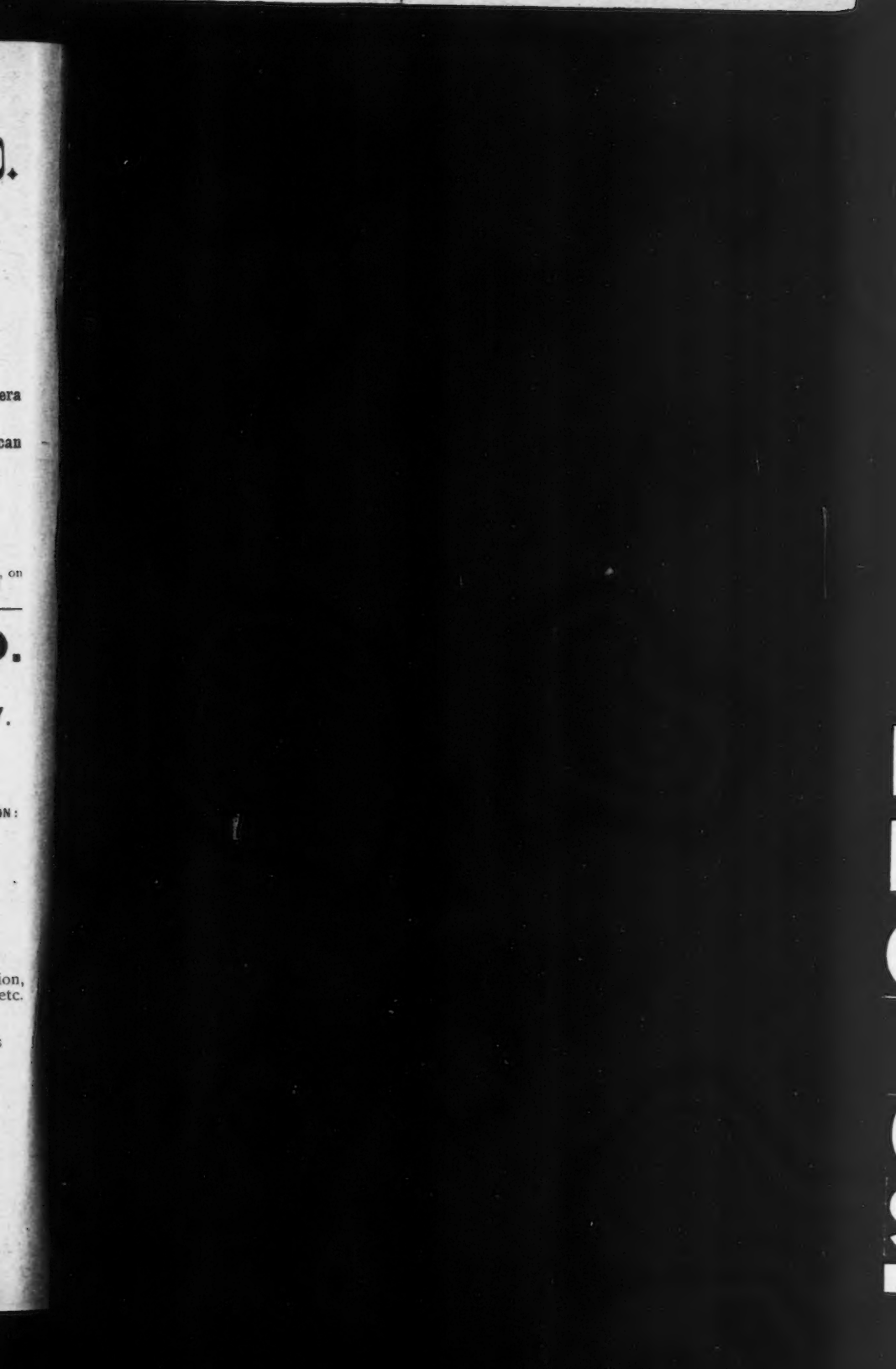
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